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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,356	03/16/2001	Jin-Nan Liaw	GODG-1410	7774

7590 07/16/2004

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EXAMINER

ODOM, CURTIS B

ART UNIT	PAPER NUMBER
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2634

5

DATE MAILED: 07/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/811,356

Applicant(s)

LIAW ET AL.

Examiner

Curtis B. Odom

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-19, 28 and 29 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-15 and 20-27 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - a. On page 4, line 28, the phrase "said equalized" is suggested to be changed to "the equalized".
 - b. On page 4, line 28, the phrase "said digital" is suggested to be changed to "the digital".
 - c. On page 6, line 5, the phrase "said corresponding" is suggested to be changed to "the corresponding".

Appropriate correction is required.

Claim Objections

2. Claims 22 and 27 are objected to because of the following informalities:
 - a. In claim 22, on line 17, the phrase "from said analog to digital converter" is suggested to be deleted.
 - b. In claim 27, nn line 6, the phrase "an encoded signal" is suggested to be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 12-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 12 recites the limitations “a gain control unit for variably controlling the gain of a decoded signal decoded from a digital signal” and “generating an equalized gain control signal for encoding said equalized gain control signal to recover said digital signal”. However, after reviewing the specification (Fig. 4 and page 8, line 1-page 9, line 10), it is the understanding of the examiner that the gain control unit controls the gain of a signal converted (not decoded) from a digital signal to an analog signal, and an equalized gain control signal is generated for converting (not encoding) the equalized gain control signal to recover the digital signal. The signals are converted using analog/digital converters and digital/analog converters. The claim language “decoding” and “encoding” implies the use of encoders and decoders which are not described or mentioned in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 5, 6, 12, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Sonu (U. S. Patent No. 6 404, 829).

Regarding claim 1, Sonu discloses a data communication system, comprising:

a gain control unit (Fig. 2, blocks 40 and 50, column 3, lines 1-2) for receiving an analog signal converted from a digital signal (column 1, lines 14-19) and gain controlling the converted analog signal;

a filter (Fig. 2, block 42, column 3, lines 4-12) coupled to the gain control unit for filtering the gain controlled analog signal; and

an analog to digital converter (Fig. 2, block 44, column 3, lines 13-16) coupled to gain control unit for converting the gain controlled analog signal to a corresponding digital signal.

Regarding claim 2, which inherits the limitations of claim 1, Sonu discloses digital signal and the corresponding digital signal output from the analog to digital converter are substantially the same (column 1, lines 16-22), wherein the digital signal output from the READ channel is the digital information read from the DVD player.

Regarding claim 5, which inherits the limitations of claim 1, Sonu discloses the gain control unit includes:

an AC amplifier (Fig 1, block 44, column 3, lines 1-2) wherein an AC amplifier can be voltage controlled); and

a variable gain unit (Fig. 2, block 50, column 3, lines 1-2) coupled to the AC amplifier, configured to variably adjust a signal gain of the converted analog signal.

Regarding claim 6, which inherits the limitations of claim 1, Sonu discloses the filter includes a low pass filter (column 3, lines 4-12).

Regarding claim 12, Sonu discloses an apparatus (Fig. 2) for providing compensation for signal attenuation in a data path including a digital-to-analog (column 1, lines 14-19) and analog-to-digital conversion (Fig. 2, block 44, column 3, lines 13-16) processes, comprising:

a gain control unit (Fig. 2, blocks 40 and 50, column 3, lines 1-2) for variably controlling the gain of a converted signal converted from a digital signal and for generating a corresponding gain controlled signal; and

a filter (Fig. 2, block 42, column 3, lines 4-12) coupled to the gain control unit for providing equalization to the gain control signal and accordingly, generating an equalized gain control signal for converting the equalized gain control signal to recover the digital signal.

Regarding claim 20, the claimed system includes features corresponding the above rejection of claim 1, which is applicable hereto.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3, 7-11, 13-15, and 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sonu (U. S. Patent No. 6, 404, 829).

Regarding claim 3, which inherits the limitations of claim 1, Sonu does not disclose the digital signal is a 64 Kbps PCM signal. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a PCM signal would have processed in the same manner as the digital signal of Sonu since it is also simply a digital signal. Thus, using a PCM signal is deemed a design choice and does not constitute patentability.

Regarding claim 7, which inherits the limitations of claim 6, Sonu discloses the low pass filter includes a high order low pass filter (column 3, lines 4-12), but does not disclose the high order filter is a second order low pass notch filter. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a second order low pass notch filter is a higher order low pass filter, thus, it is would have been obvious that this filter could have been implemented to perform the functions presented by Sonu. Thus, the use of a second order low pass notch filter is deemed a design choice and does not constitute patentability.

Regarding claims 8-10, which inherit the limitations of claim 6, Sonu discloses a high, order low pass filter (column 3, lines 4-12). Sonu does not disclose the low pass filter includes a pole at approximately 4,065 Hz and a zero at approximately 4,216 Hz, the low pass filter includes a quality factor of 40.9, and the low pass filter is configured to increase the band edge

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gain at a frequency of approximately 4 KHz by approximately 6 dB. However, Sonu does disclose the low pass filter is programmable, can boost the amplitude of a signal by approximately 6 dB, and has a adjustable gain depending on the input signal characteristics. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that poles, zeros, and quality factor are design specifications which can be programmed into a filter such as the low pass filter taught by Sonu in order for a user to obtain a desired filter output. Since the gain of the filter is also programmable and it is known the that the filter can increase a signal by 6 dB, then it would have been obvious to one of ordinary skill in the art at the time the invention was made that the filter could have been programmed to increase the band edge gain at a frequency of approximately 4 KHz by approximately 6 dB. Thus, claims 8-10 do not constitute patentability.

Regarding claim 11, which inherits the limitations of claim 1, Sonu does not disclose the received digital signal is provided from a central office switch. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the device of Sonu could have been implemented into a communication system a central office switch. The device would operate on the digital signal in the communication system in the same manner as the device operates on the described digital signal as taught by Sonu. Thus, claim 11 does not constitute patentability.

Regarding claims 13 and 14, which inherit the limitations of claim 12, the claimed apparatus includes features corresponding to the above rejection of claims 8-10, which is applicable hereto.

Regarding claims 15, which inherits the limitations claim 12, Sonu discloses the variable gain control unit includes an AC amplifier (Fig 1, block 44, column 3, lines 1-2) wherein an AC amplifier can be voltage controlled); and a gain unit (Fig. 2, block 50, column 3, lines 1-2) coupled to the AC amplifier, configured to variably adjust a signal gain of the converted analog signal. However, Sonu et al. does not discloses the variable gain unit is configured to adjust the gain of the converted signal by a factor of one. However, it would have been obvious to one of ordinary skill in the art that since the gain unit is variable (column 4, lines 23-27) that gain control unit could have been configured to adjust the gain of the converted signal by a factor of one. Thus, claim 15, does not constitute patentability.

Regarding claim 21, Sonu discloses data communication method, comprising the steps of:

receiving (Fig. 2, blocks 40 and 50, column 3, lines 1-2) an analog signal converted from a digital signal (column 1, lines 14-19);

variably gain controlling (Fig. 2, blocks 40 and 50, column 3, lines 1-2) the converted analog signal;

filtering (Fig. 2, block 42, column 3, lines 4-12) the gain controlled analog signal; and

converting (Fig. 2, block 44, column 3, lines 13-16) the filtered, gain controlled analog signal into a corresponding digital signal.

Sonu does not disclose the digital signal is a PCM signal. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a PCM signal would have processed in the same manner as the digital signal of Sonu since it is also simply a

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digital signal. Thus, using a PCM signal is deemed a design choice and does not constitute patentability.

Regarding claim 22, which inherits the limitations of claim 21, Sonu discloses digital signal and the corresponding digital signal are substantially the same (column 1, lines 16-22), wherein the digital signal output from the READ channel is the digital information read from the DVD player.

Regarding claim 23, which inherits the limitations of claim 21, Sonu does not disclose the digital signal is a 64 Kbps PCM signal. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a PCM signal would have processed in the same manner as the digital signal of Sonu since it is also simply a digital signal. Thus, using a PCM signal is deemed a design choice and does not constitute patentability.

Regarding claim 24, which inherits the limitations of claim 21, Sonu discloses the step of filtering includes the step of providing a low pass filter (column 3, lines 4-12).

Regarding claims 25-27, the claimed method includes features corresponding to the above rejection of claims 8-11, which is applicable hereto.

Allowable Subject Matter

9. Claims 16-19, 28, and 29 are allowable over prior art because related references do not disclose a multiple subscriber system and method supporting v.90 standard data transmission including a variable gain control unit, low pass filter, mu-law analog to digital converter, and a

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low pass filter configured to increase the band edge gain of the gain controlled signal at a frequency of approximately 4 KHz by approximately 6 dB.

10. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Amrany et al. (U. S. Patent No. 6, 067, 316) discloses a multiple subscriber system and method supporting v.90 standard data transmission including a gain control unit, filter and analog to digital converter.

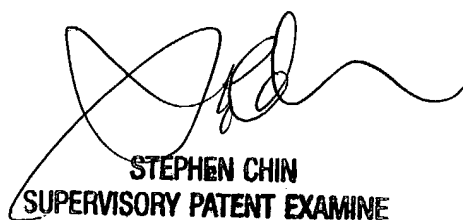
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 703-305-4097. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Curtis Odom
July 8, 2004



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